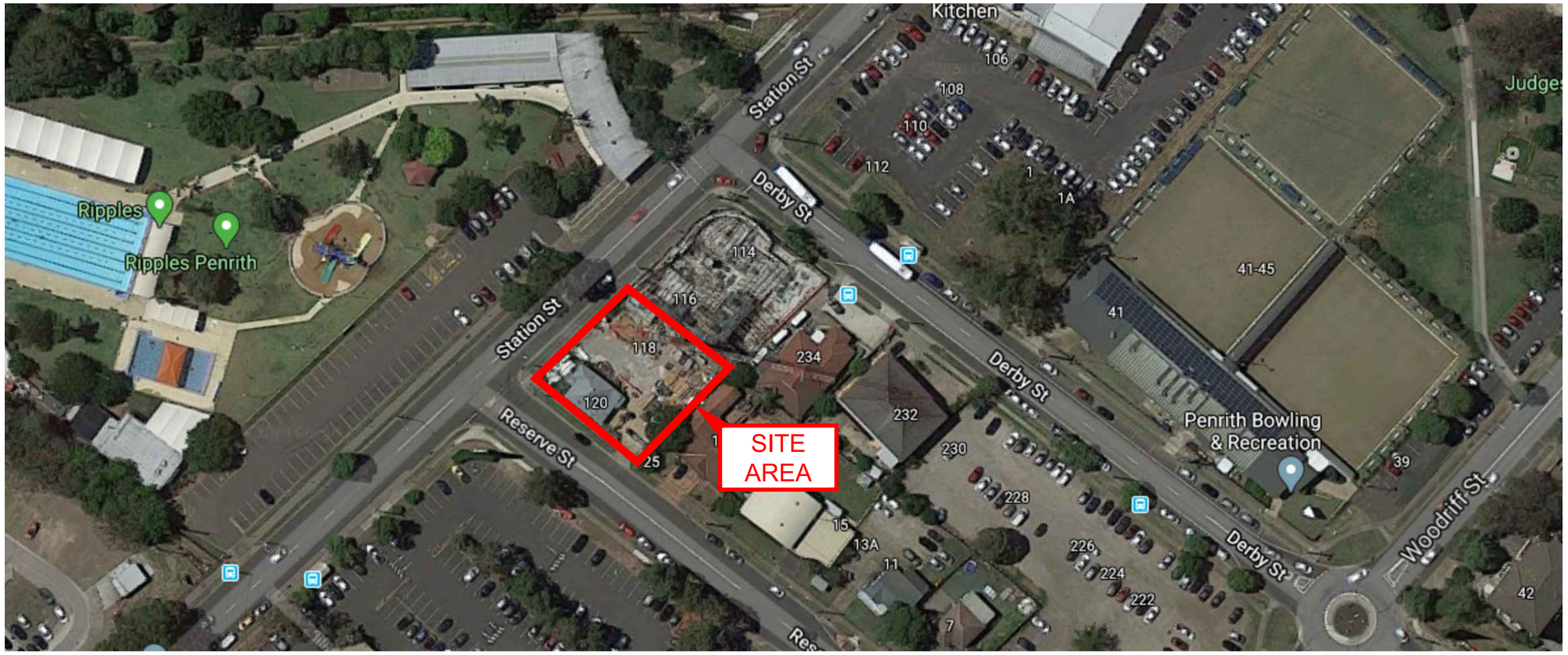
# 118-120 STATION STREET, PENRITH
# PROPOSED MIXED USE DEVELOPMENT

STORMWATER CONCEPT PLANS




LOCALITY PLAN

N.T.S

## DRAWING INDEX

| Drawing No. | DESCRIPTION |
|---|---|
| 000 | COVER SHEET PLAN |
| 101 | STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 1 OF 2 |
| 102 | STORMWATER CONCEPT PLAN BASEMENT LEVEL 2 SHEET 2 OF 2 |
| 103 | STORMWATER CONCEPT PLAN BASEMENT LEVEL 1 |
| 104 | STORMWATER CONCEPT PLAN |
| 105 | WSUD CATCHMENT PLAN, MUSIC MODEL, RESULTS & NODE WATER BALANCE |
| 106 | RWT & WSUD DETAILS |
| 107 | MISCELLANEOUS DETAILS SHEET |

NOT FOR CONSTRUCTION

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|---|---|---|---|---|---|
| C | COUNCIL COMMENTS | 18/03/2021 | AGN | JSF | |
| B | ARCHITECTURAL AMENDMENTS | 20/11/2020 | EHZ | JSF | |
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1cm at full size 10cm 20cm

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Penrith Council

Scale

Certification By:
Anthony Hasham

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Project
118-120 STATION STREET, PENRITH
PROPOSED MIXED USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION

Drawing Title
COVER SHEET PLAN

| Scale | A1 | Project No. | Dwg. No. | Issue |
|---|---|---|---|---|
| N.T.S. | | 200763 | 000 | C |

## LEGEND

- PROPOSED STORMWATER
- SURFACE FLOW ARROWS
- SUBSOIL DRAINAGE
- CLEANING EYE (OR INSPECTION EYE)
- PROPOSED STORAGE AREA
- × RL 27.56 — FINISHED SURFACE LEVEL
- GRATED DRAIN
- FG — FLOOR GRATE

## STANDARD PUMP OUT DESIGN NOTES

THE PUMP OUT SYSTEM SHALL BE DESIGN TO BE OPERATED IN THE FOLLOWING MANNER:

1 - THE PUMP SHALL BE PROGRAMMED TO WORK ALTERNATELY TO ALLOW BOTH PUMPS TO HAVE AN EQUAL OPERATION LOAD AND PUMP LIFE.

2 - A FLOAT SHALL BE PROVIDED TO ENSURE OF THE MINIMUM REQUIRED WATER LEVEL IS MAINTAINED WITHIN THE SUMP AREA OF THE BELOW GROUND TANK. IN THIS REGARD THIS FLOAT WILL FUNCTION AS AN OFF SWITCH FOR THE PUMPS AT THE MINIMUM WATER LEVEL. THE SAME FLOAT SHALL BE SET TO TURN ONE OF THE PUMPS ON UPON THE WATER LEVEL IN THE TANK RISING TO APPROXIMATELY 300mm ABOVE THE MINIMUM WATER LEVEL. THE PUMP SHALL OPERATE UNTIL THE TANK IS DRAINED TO THE MINIMUM WATER LEVEL.

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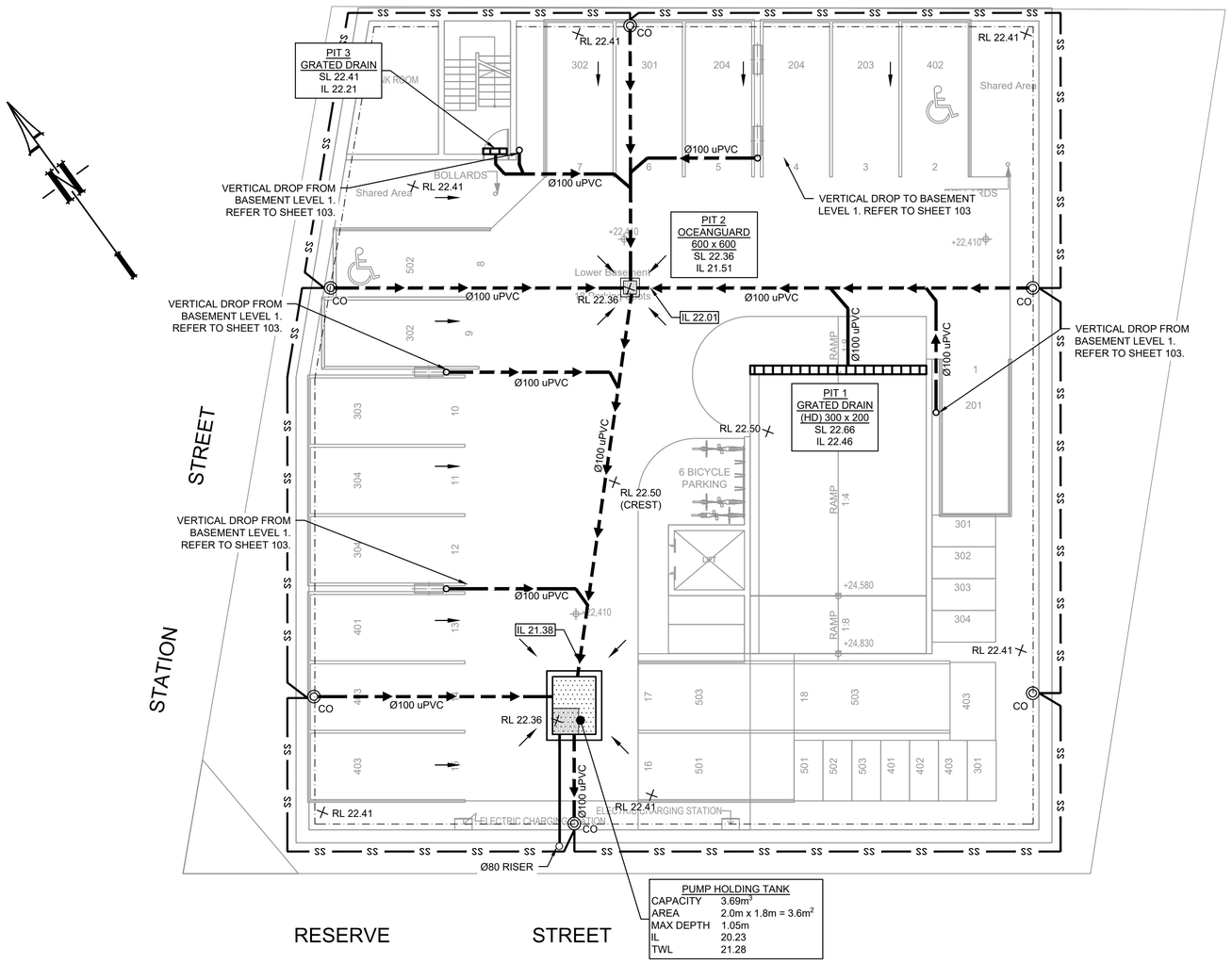
4 - AN ALARM SYSTEM SHALL BE PROVIDE WITH A FLASHING STROBE LIGHT AND A PUMP FAILURE WARNING SIGN WHICH ARE TO BE LOCATED AT THE DRIVEWAY ENTRANCE TO THE BASEMENT LEVEL THE ALARM SYSTEM SHALL BE PROVIDED WITH A BATTERY BACK-UP IN CASE OF POWER FAILURE.

5 - A CONFINED SPACE DANGER SIGN SHALL BE PROVIDED AT ALL ACCESS POINT TO THE PUMP-OUT STORAGE TANK IN ACCORDANCE WITH THE UPPER PARRAMATA RIVER CATCHMENT TRUST OSD HANDBOOK.




## BASEMENT LEVEL 2 PLAN

SCALE 1:100

**DANGER**

WHEN EXCAVATING WITHIN ANY SITE, FOOTPATH AND ROADWAY, ALL SERVICES SHALL BE LOCATED PRIOR TO COMMENCEMENT OF THE EXCAVATION WORKS.

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**WARNING**

PUMP OUT SYSTEM FAILURE IN BASEMENT WHEN LIGHT IS FLASHING AND SIREN SOUNDING

## BASEMENT PUMP OUT FAILURE WARNING SIGN

SIGN SHALL BE PLACED IN A CLEAR AND VISIBLE LOCATION WHERE VEHICLES ENTER THE BASEMENT

COLOURS:
"WARNING" = RED
BORDER AND OTHER LETTERING = BLACK

**DANGER**

CONFINED SPACE
NO ENTRY WITHOUT CONFINED SPACE TRAINING

## CONFINED SPACE DANGER SIGN

A) A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION AT ALL ACCESS POINTS, SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANK/S CONFINED SPACE.

B) MINIMUM DIMENSIONS OF THE SIGN - 300mm x 450mm (LARGE ENTRIES, SUCH AS DOORS) -250mm x 180mm (SMALL ENTRIES SUCH AS GRATES & MANHOLES)

C) THE SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED ALUMINUM OR POLYPROPYLENE

D) SIGN SHALL BE AFFIXED USING SCREWS AT EACH CORNER OF THE SIGN

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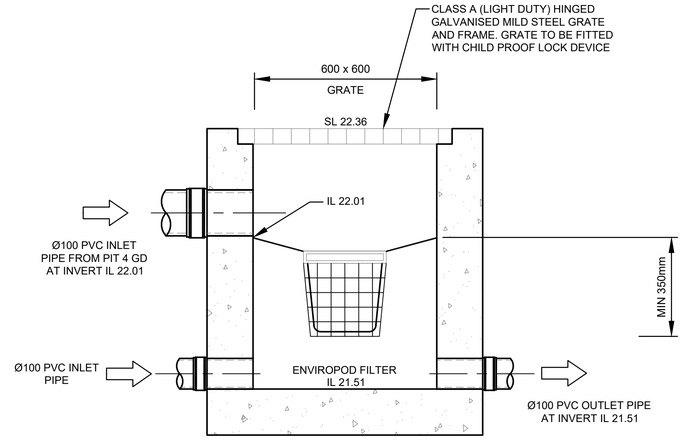


## PIT 2 OCEANGUARD CONFIGURATION SECTION

SCALE 1:10

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Scale
0 2 4 6 m
SCALE 1:100 @ A1

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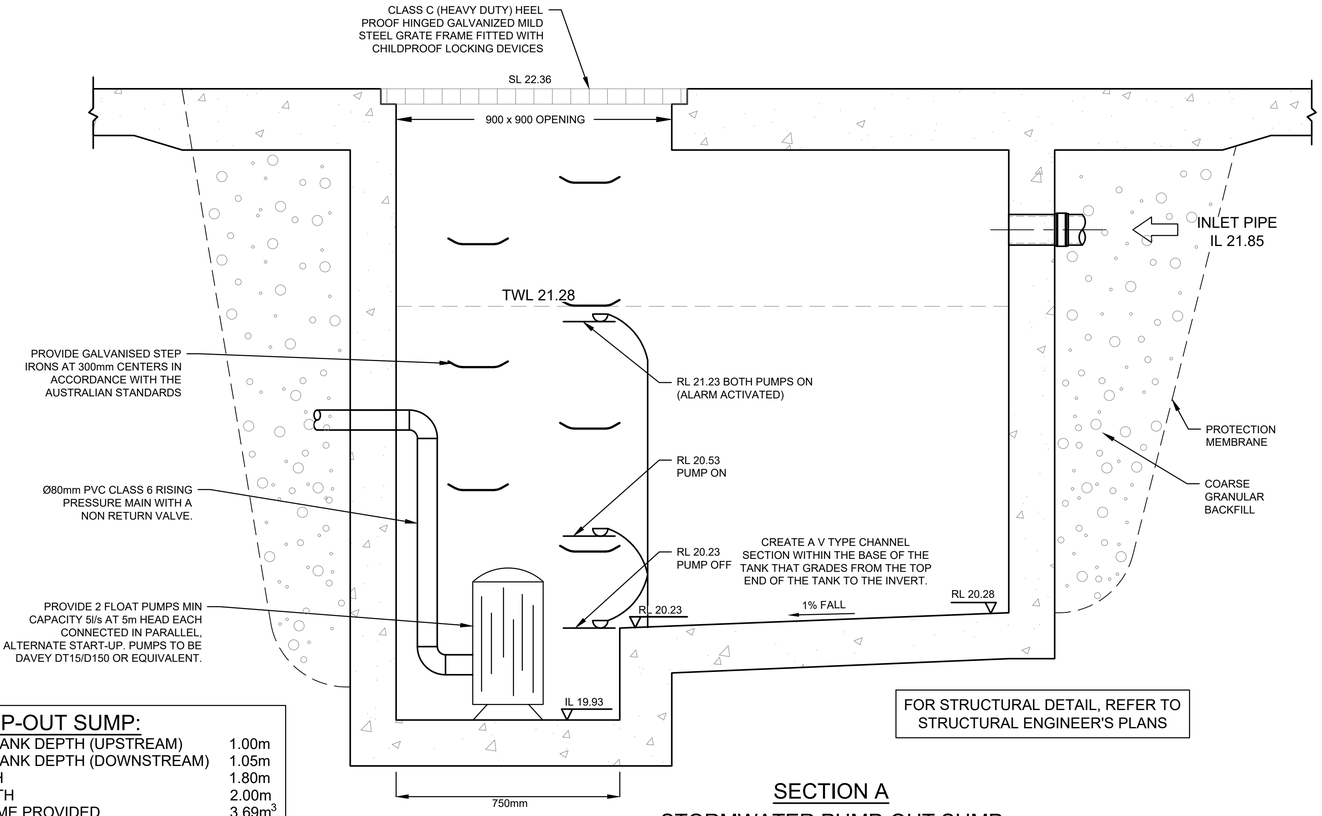
Project
118-120 STATION STREET, PENRITH
PROPOSED MIXED USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION

Drawing Title
STORMWATER CONCEPT PLAN
BASEMENT LEVEL 2
SHEET 1 OF 2

| Scale | A1 | Project No. | Dwg. No. | Issue |
|---|---|---|---|---|
| 1:100 | | 200763 | 101 | D |

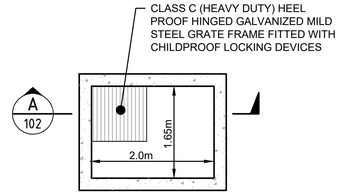



FOR STRUCTURAL DETAIL, REFER TO STRUCTURAL ENGINEER'S PLANS

## SECTION A
## STORMWATER PUMP-OUT SUMP

SCALE 1:10

| PUMP-OUT SUMP: | |
|---|---|
| MAX TANK DEPTH (UPSTREAM) | 1.00m |
| MAX TANK DEPTH (DOWNSTREAM) | 1.05m |
| WIDTH | 1.80m |
| LENGTH | 2.00m |
| VOLUME PROVIDED | 3.69m$^3$ |



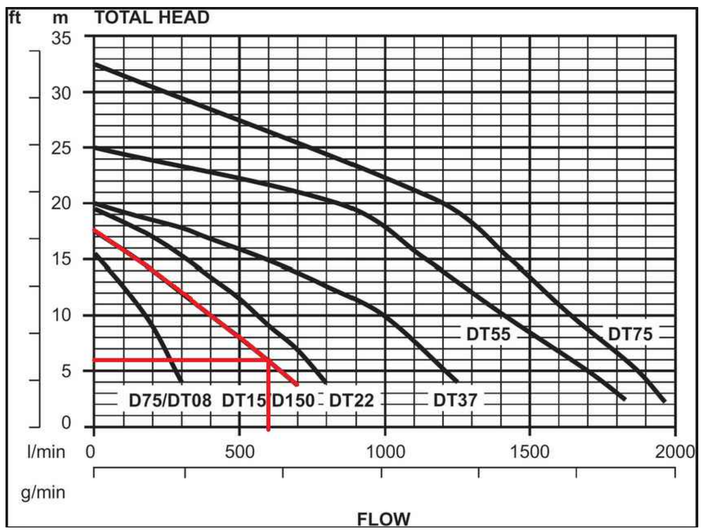

**NOTE:**
1- FOR ALL THE STRUCTURAL DETAILS, REFER TO STRUCTURAL ENGINEER'S PLAN.
2- ALL THE AG LINES BEHIND BASEMENT WALLS TO BE CONNECTED TO PUMP-OUT SUMP.

## PUMP-OUT SUMP DETAIL PLAN VIEW

SCALE 1:50

## PUMP STORAGE VOLUME CALCULATION

- $I_{100,\ 2hrs}$ = 44.4 mm/hour
- PUMP STORAGE CATCHMENT AREA: A = 31.89m$^2$ = 0.00318 ha
- Q = C x I x A / 360 WHERE C = 1.0 (REFER TO AS3500.3.5.4.6 (a))
  = 1.0 x 44.4 x 0.00318 / 360
  = 0.000393 m$^3$/s
  = 0.393 L/s
- THEREFORE, THE PUMP HOLDING TANK VOLUME IS:
  V = 0.393 x 2.0 x 3600
  = 2.83 m$^3$
- TOTAL REQUIRED VOLUME IS 2.83m$^3$




**PUMP CALCULATIONS**

| Project Address: | 118 - 120 Station Street, Penrith |
|---|---|

HL=(3.35x10e6xQ/(d^2.63xC))^1.852
HL(m/100m), Q(L/s(, d(mm)

h1=kv^2/2g
k(cum), v(m/s), g=9.8(m

**H(total head)=Hf+h1+Elevation Head(static head)**

v(m/s)= 0.00
d(mm)= 80
Bend Losses, Kb= 3.06
Valve Losses, Kv= 2.13
Entry/Exit Losses, Ke= 5.00
Cum Losses, K= 10.19

Elevation Head(m)= 10
Pipe Length(m)= 10

| Hazen - Williams C= 145 | Hazen-Williams Constant |
|---|---|
| | 125-140 Commercial steel pipe |
| | 135-140 Bitumen Lined Cast iron pipe |
| | 140-145 Copper Tube |
| | 145-150 PVC |

| Start Flow= | 0 |
|---|---|
| Increment= | 1 |

| Q(L/s) | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HL(m/100m) | | 0.00 | 0.06 | 0.23 | 0.50 | 0.85 | 1.28 | 1.79 | 2.38 | 3.05 | 3.80 | 4.61 |
| Hf(m) | HL x pipe Length/100 | 0.00 | 0.01 | 0.02 | 0.05 | 0.08 | 0.13 | 0.18 | 0.24 | 0.31 | 0.38 | 0.46 |
| v(m/s) | Q(L/s) / area of pipe crossing section | 0.00 | 0.20 | 0.40 | 0.60 | 0.80 | 0.99 | 1.19 | 1.39 | 1.59 | 1.79 | 1.99 |
| h1(m) | k(cum) x v(m/s)^2/2xg | 0.00 | 0.02 | 0.08 | 0.19 | 0.33 | 0.51 | 0.74 | 1.01 | 1.32 | 1.67 | 2.06 |
| H(m) | =Hf+H1+Elevation Head | 10.00 | 10.03 | 10.11 | 10.23 | 10.41 | 10.64 | 10.92 | 11.25 | 11.62 | 12.05 | 12.52 |

## UNDERGROUND PUMP - OUT SUMP STAGED STORAGE CALCULATIONS

| DEPTH (mm) | AREA (m$^2$) | CUMULATIVE VOLUME (m$^3$) |
|---|---|---|
| 0 | 3.6 | 0 |
| 100 | 3.6 | 0.27 |
| 200 | 3.6 | 0.63 |
| 300 | 3.6 | 0.99 |
| 400 | 3.6 | 1.35 |
| 500 | 3.6 | 1.71 |
| 600 | 3.6 | 2.07 |
| 700 | 3.6 | 2.43 |
| 800 | 3.6 | 2.79 |
| 900 | 3.6 | 3.15 |
| 1000 | 3.6 | 3.51 |
| 1050 | 3.6 | 3.69 |

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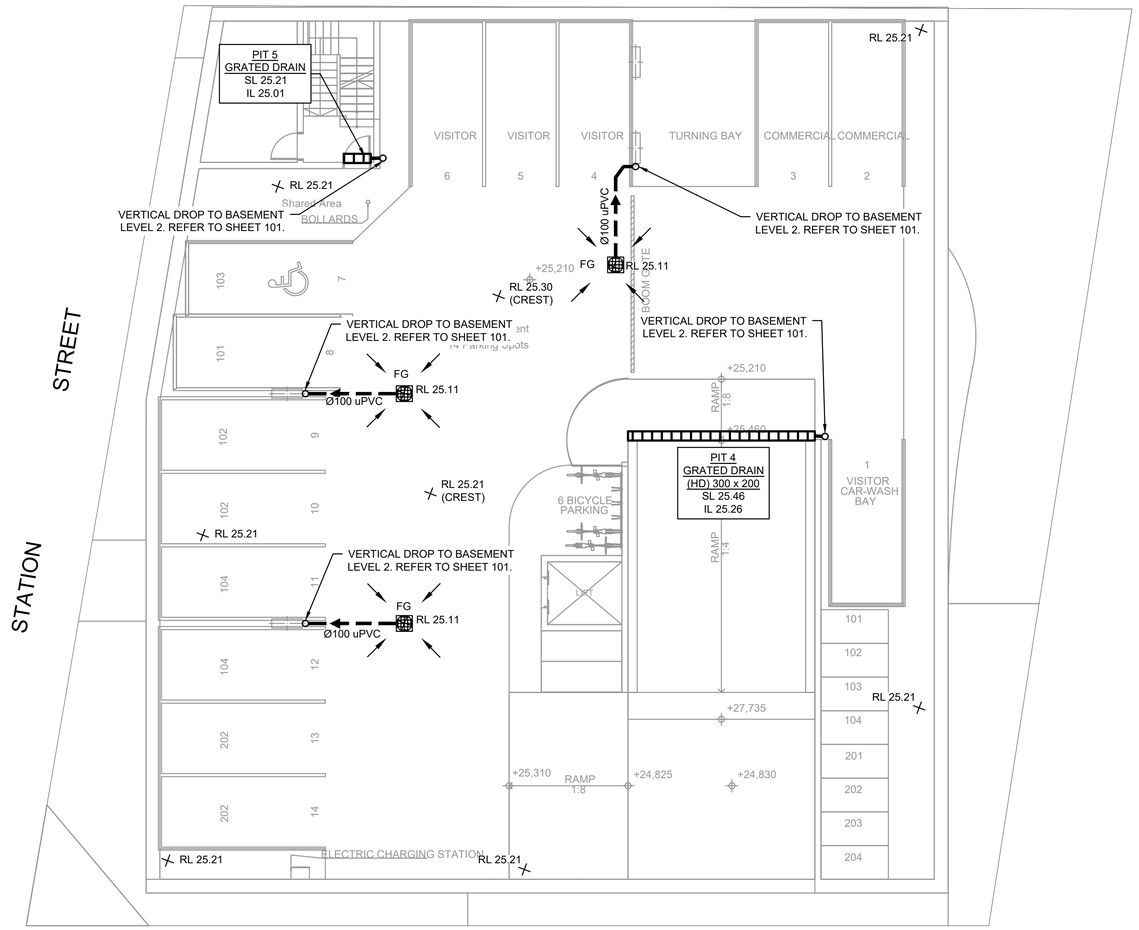
Drawing Title: STORMWATER CONCEPT PLAN
BASEMENT LEVEL 2
SHEET 2 OF 2

| Scale A1 | Project No. | Dwg. No. | Issue |
|---|---|---|---|
| As Shown | 200763 | 102 | C |




RESERVE STREET

## BASEMENT LEVEL 1 PLAN

SCALE 1:100

## LEGEND

- PROPOSED STORMWATER
- SURFACE FLOW ARROWS
- SS SS SUBSOIL DRAINAGE
- CLEANING EYE (OR INSPECTION EYE)
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PROPOSED MIXED USE DEVELOPMENT
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Drawing Title
STORMWATER CONCEPT PLAN
BASEMENT LEVEL 1

| Scale | A1 | Project No. | Dwg. No. | Issue |
|---|---|---|---|---|
| 1:100 | | 200763 | 103 | D |

## GENERAL NOTES

1. ALL THE CLEANING EYES (OR INSPECTION EYES) FOR THE UNDERGROUND PIPES HAVE TO BE TAKEN UP TO THE FINISHED GROUND LEVEL FOR EASY IDENTIFICATION AND MAINTENANCE PURPOSES
2. ALL LEVELS SHALL RELATE TO THE ESTABLISHED BENCH MARK.
3. THE BUILDER SHALL ENSURE THAT THE STORMWATER ENGINEERS DRAWINGS CORRESPOND TO THE ARCHITECTURAL, STRUCTURAL AND LANDSCAPING DRAWINGS. IF THERE EXISTS AND DISCREPANCIES BETWEEN THE DRAWINGS, THE BUILDER SHALL REPORT THE DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORKS
4. ALL MULCHING TO BE USED WITHIN THE AREA DESIGNATED AS ONS-SITE DETENTION STORAGE SHALL BE OF A NON-FLOTABLE MATERIAL SUCH AS DECORATIVE RIVER GRAVEL. PINE BARK MULCHING SHALL NOT BE USED WITHIN THE DETENTION STORAGE AREA.
5. ALL RETAINING WALLS SHALL BE CONSTRUCTED COMPLETELY WITHIN THE PROPERTY BOUNDARY LIMITS TO DETAILS PREPARED BY THE STRUCTURAL ENGINEER. WALLS FORMING THE ON-SITE DETENTION SYSTEM SHALL BE OF MASONARY/BRICK CONSTRUCTION AND WATER TIGHT.
6. ALL SUB-SOIL DRAINAGE SHALL BE A MINIMUM OF 65MM DIA AND SHALL BE PROVIDED WITH A FILTER SOCK. THE SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH DETAILS TO BE PROVIDED BY THE LANDSCAPE ARCHITECT.
7. PRIOR TO COMMENCING ANY WORKS, THE BUILDER SHALL ENSURE THAT THE INVERT LEVELS OF WHERE THE SITE STORMWATER SYSTEM CONNECTS INTO THE COUNCILS KERB/DRAINAGE SYSTEM MATCHED THE DESIGN LEVELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE DESIGN ENGINEER IMMEDIATELY.
8. ALL LINES ARE TO BE Ø90 uPVC 1.0% GRADE UNLESS NOTED OTHERWISE. CHARGED LINES TO BE SEWERGRADE & SEALED.
9. EXISTING SERVICES LOCATIONS SHOWN INDICATIVE ONLY.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE & LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY EARTHWORKS.
11. ALL PIPES TO HAVE MIN 150mm COVER IF LOCATED WITHIN PROPERTY.
12. ALL PITS IN DRIVEWAYS TO BE 450x450 CONCRETE AND ALL PITS IN LANDSCAPED AREAS TO BE 450x450PLASTIC.
13. PITS LESS THAN 450 DEEP MAY BE BRICK, PRECAST OR CONCRETE.
14. ALL BALCONIES AND ROOFS TO BE DRAINED AND TO HAVE SAFETY OVERFLOWS IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.
15. ALL EXTERNAL SLABS TO BE WATERPROOFED.
16. ALL GRATES TO HAVE CHILD PROOF LOCKS.
17. ALL DRAINAGE WORKS TO AVOID TREE ROOTS.
18. ALL DP'S TO HAVE LEAF GUARDS.
19. ALL EXISTING LEVELS TO BE CONFIRMED BY BUILDER PRIOR TO CONSTRUCTION.
20. ALL WORK WITHIN COUNCIL RESERVE TO BE INSPECTED BY COUNCIL PRIOR TO CONSTRUCTION.
21. COUNCIL'S ISSUED FOOTWAY DESIGN LEVELS TO BE INCORPORATED INTO THE FINISHED LEVELS ONCE ISSUED BY COUNCIL.
22. ALL WORK SHALL BE IN ACCORDANCE WITH B.C.A. AND A.S.3500.3.
23. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR LANDSCAPING.
24. ALL WALLS FORMING THE DETENTION BASINS SHALL BE CONSTRUCTED WHOLLY WITHIN THE PROPERTY BOUNDARIES OF THE SITE BEING DEVELOPED.
25. OSD WARNING SIGN AND SAFETY FENCING SHALL BE PROVIDED TO ABOVE GROUND OSD STORAGE AREA IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS.
26. ENSURE THAT NON FLOATABLE MULCH IS USED IN DETENTION BASINS, ie, USE DECORATIVE ROCK MULCH OR EQUIVALENT.
27. THE OSD BASIN / TANK IS TO BE BUILT TO THE CORRECT LEVELS & SIZE AS PER THIS DESIGN. ANY VARIATIONS ARE TO BE DONE UNDER CONSULTATION FROM OUR OFFICE ONLY. ANY AMENDMENTS WITHOUT OUR APPROVAL WOULD RESULT IN ADDITIONAL FEES FOR REDESIGN AT OC STAGE OR IF A SOLUTION CANNOT BE FOUND, RECONSTRUCTION IS REQUIRED UNDER THE CONTRACTOR'S EXPENSES
28. ALL PIPES IN BALCONIES TO BE Ø65 uPVC IN CONCRETE SLAB. CONTRACTOR TO PROVIDE A BREAK / OPEN VOID IN RAIL / BALLUSTRADE FOR STORMWATER EMERGENCY OVERFLOW. ALL ENCLOSED AREAS / PLANTER BOXES TO BE FITTED WITH FLOOR WASTES & DRAINED TO OSD. DOWNPIPES TO BE CHECKED BY ARCHITECT & PLUMBER PRIOR TO CONSTRUCTION.

## LEGEND

- PROPOSED STORMWATER BYPASSING OSD
- PROPOSED STORMWATER DRAINING TO RWT
- PROPOSED STORMWATER DRAINING TO OSD
- ExS — EXISTING SEWER MAIN (FROM RECORDS)
- ExW — EXISTING WATER (FROM RECORDS)
- ExE — EXISTING POWER (FROM RECORDS)
- ExG — EXISTING GAS (FROM RECORDS)
- ExT — EXISTING TELSTRA (FROM RECORDS)
- SURFACE FLOW ARROWS
- X RL 47.00 — DESIGN SURFACE LEVEL
- NS 26.45 — EXISTING SURFACE LEVEL
- PROPOSED RAINWATER TANK STORAGE
- PROPOSED WSUD AREA
- Ø65 RISER WITH NON-RETURN VALVE

## RWT NOTE:

RAINWATER RE-USE AS SPECIFIED BY BASIX CERTIFICATE TO OUTDOOR TAPS AND/OR TOILETS AND/OR WASHING MACHINE.

## PIPES NOTE:

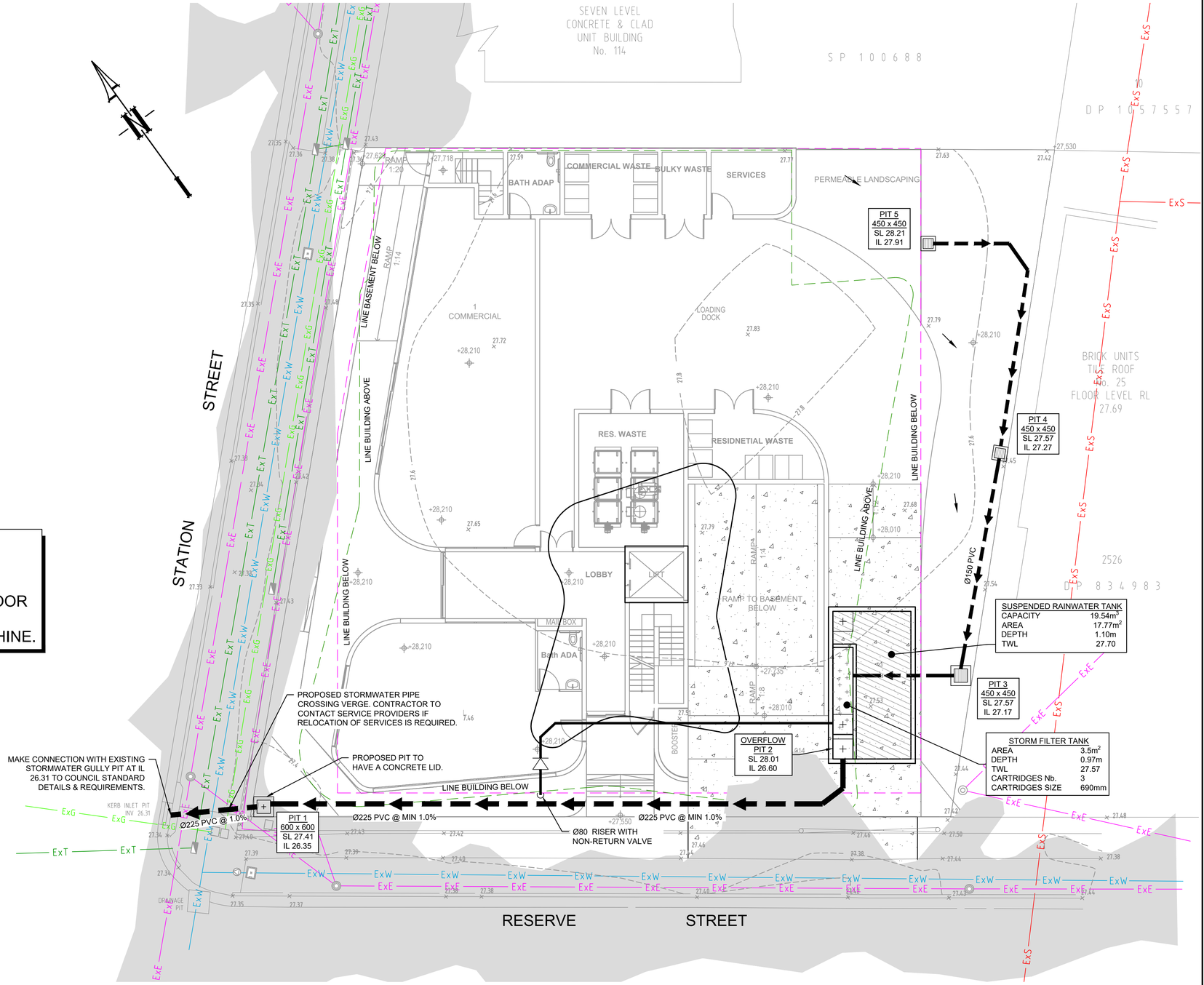
Ø65 PVC @ MIN 1.0%
Ø90 PVC @ MIN 1.0%
Ø100 PVC @ MIN 1.0%
Ø150 PVC @ MIN 1.0%
Ø225 PVC @ MIN 0.5%
Ø300 PVC @ MIN 0.4%
UNLESS NOTED OTHERWISE

## ROOF NOTE:

IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE MINIMUM 30 TO 40MM OF PONDING IS ACHIEVED OVER THE RAINWATER OUTLETS BY GRADING CATCHMENTS' SURFACES AT MINIMUM 0.5% FALL FOR PAVED SURFACES AND MINIMUM 1% FALL FOR OTHER SURFACES.

## ROOF NOTE:

ALL ROOF DRAINAGE SYSTEM TO BE CONNECTED TO WSUD, & IS SUBJECT TO DETAILED DESIGN STAGE. ALL DOWNPIPES TO BE Ø100mm DIAMETER TO CATER FOR THE 1 in 100yr ARI & ALL GUTTERS TO BE CONSTRUCTED ACCORDINGLY.




## GROUND FLOOR PLAN

SCALE 1:100

NOT FOR CONSTRUCTION

| Issue | Description | Date | Designed | Engineer | Checked |
|---|---|---|---|---|---|
| D | ISSUE FOR DEVELOPMENT APPLICATION | 10/09/2021 | DBF | OC | OC |
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0 1cm at full size 10cm 20cm


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abn: 90 616 216 196


Client: Mr. David Reeve

Council: Penrith Council

Scale: 0 2 4 6 m — SCALE 1:100 @ A1

Certification By: Anthony Hasham


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Project: 118-120 STATION STREET, PENRITH
PROPOSED MIXED USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION

Drawing Title: STORMWATER CONCEPT PLAN

| Scale | Project No. | Dwg. No. | Issue |
|---|---|---|---|
| 1:100 A1 | 200763 | 104 | D |

Node Water Balance - 1 x 19.54kL RWT

| | Flow (ML/yr) | TSS (kg/yr) | TP (kg/yr) | TN (kg/yr) | GP (kg/yr) |
|---|---|---|---|---|---|
| Flow In | 0.14 | 3.55 | 0.02 | 0.30 | 3.81 |
| ET Loss | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Infiltration Loss | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Low Flow Bypass Out | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| High Flow Bypass Out | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Pipe Out | 0.04 | 0.58 | 0.01 | 0.07 | 0.00 |
| Weir Out | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Transfer Function Out | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Reuse Supplied | 0.10 | 1.16 | 0.01 | 0.14 | 0.00 |
| Reuse Requested | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| % Reuse Demand Met | 80.72 | 0.00 | 0.00 | 0.00 | 0.00 |
| % Load Reduction | 69.97 | 83.72 | 73.62 | 75.84 | 100.00 |

Decimal Places 2

## NODE WATER BALANCE FOR RAINWATER TANK

N.T.S.

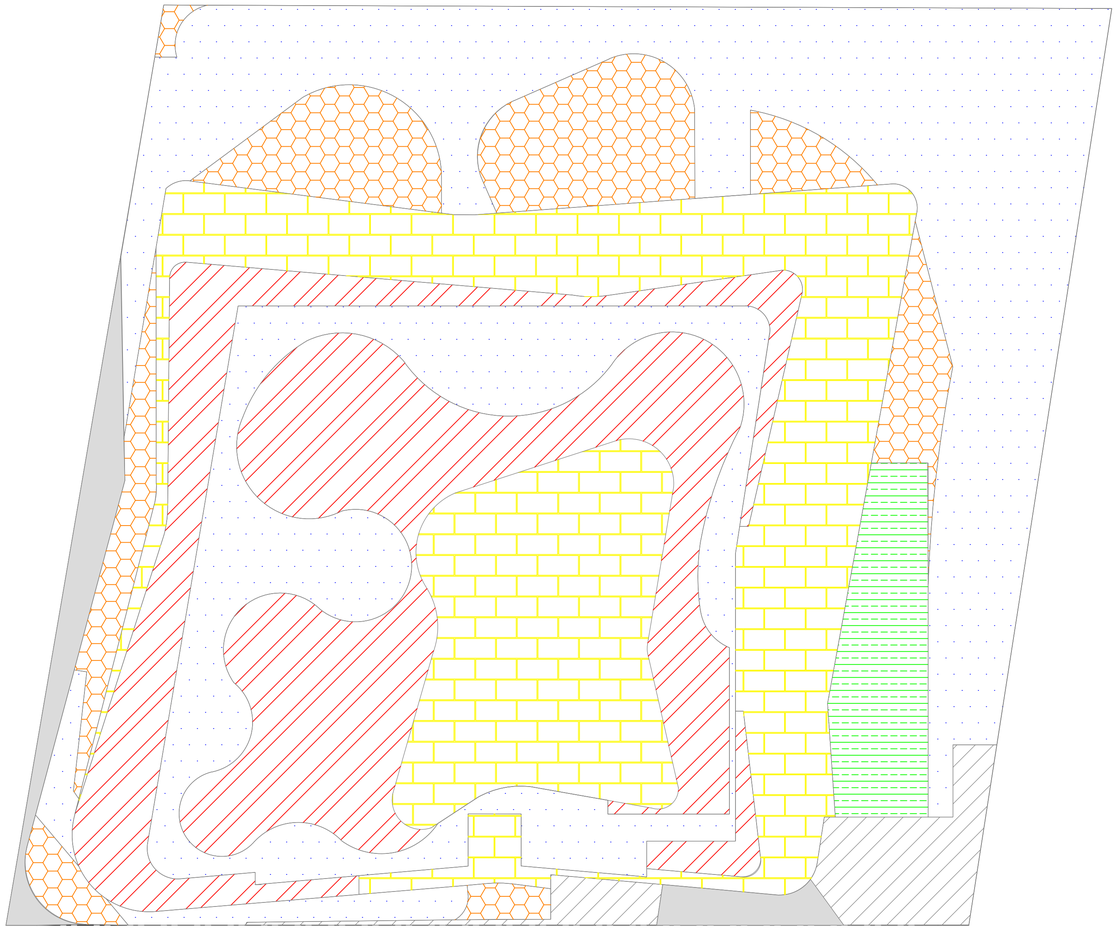
## RWT RE-USE CALCULATIONS:

AREA TO BE IRRIGATED = 114.73m$^2$
YEARLY RE-USE DEMAND = 0.4 KL/Yr/m$^2$ x 114.73 m$^2$
= 46 KL/Yr
DAILY RE-USE DEMAND:
RAINWATER RE-USE FOR TOILET FLUSHING OF 2 ON-SITE TOILETS =
2x0.1 KL/Day/Toilet = 0.2KL/Day

## CATCHMENT LEGEND

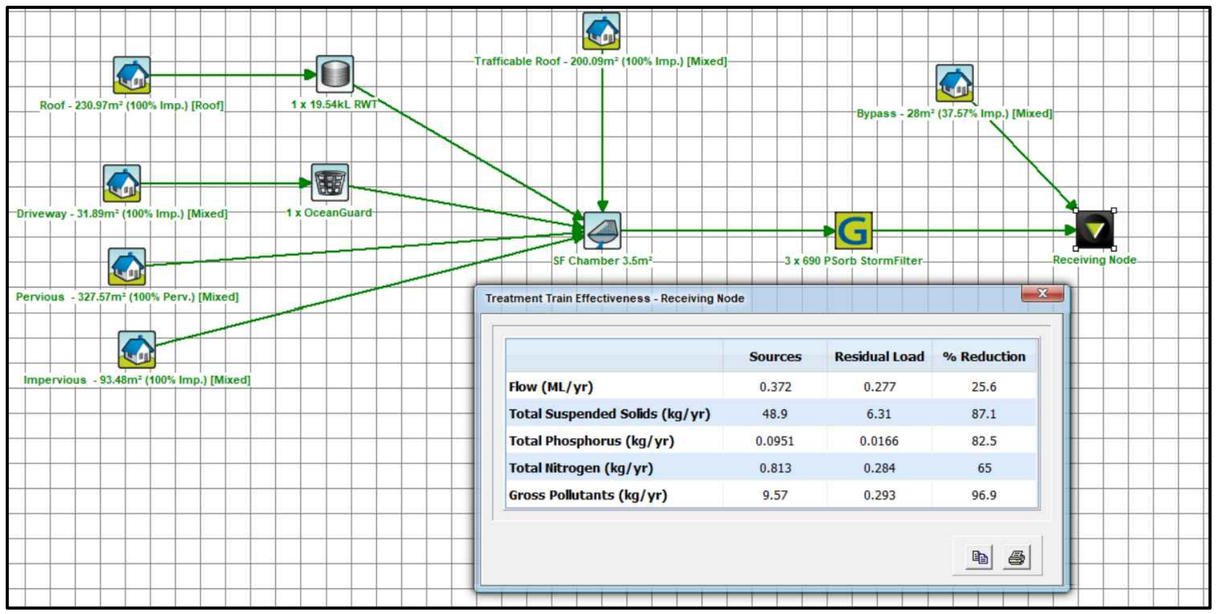
- NON-TRAFFICABLE ROOF TO RWT THEN TO WSUD =230.97m$^2$
- TRAFFICABLE ROOF TO WSUD = 200.09m$^2$
- DRIVEWAY TO OCEANGUARD THEN TO WSUD = 31.89m$^2$
- PERVIOUS AREA TO WSUD = 327.57m$^2$
- IMPERVIOUS AREA TO WSUD = 93.48m$^2$
- AREA BYPASSING = 28m$^2$ (30.57% IMPERVIOUS)
- 100yr ARI FLOODING NOT INLUDED IN WSUD CALCULATION

TOTAL AREA INCLUDED IN CALCULATIONS = 912.0m$^2$
TOTAL AREA DRAINING TO WSUD = 884.0m$^2$
TOTAL SITE AREA = 935.3m$^2$



## WSUD CATCHMENT PLAN

SCALE 1:100




Treatment Train Effectiveness - Receiving Node

| | Sources | Residual Load | % Reduction |
|---|---|---|---|
| Flow (ML/yr) | 0.372 | 0.277 | 25.6 |
| Total Suspended Solids (kg/yr) | 48.9 | 6.31 | 87.1 |
| Total Phosphorus (kg/yr) | 0.0951 | 0.0166 | 82.5 |
| Total Nitrogen (kg/yr) | 0.813 | 0.284 | 65 |
| Gross Pollutants (kg/yr) | 9.57 | 0.293 | 96.9 |

## MUSIC RESULTS

N.T.S.

## ROOF NOTE:

ALL ROOF DRAINAGE SYSTEM TO BE CONNECTED TO WSUD, & IS SUBJECT TO DETAILED DESIGN STAGE. ALL DOWNPIPES TO BE Ø100mm DIAMETER TO CATER FOR THE 1 in 100yr ARI & ALL GUTTERS TO BE CONSTRUCTED ACCORDINGLY.

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Scale
0 2 4 6 m
SCALE 1:100 @ A1

Certification By:
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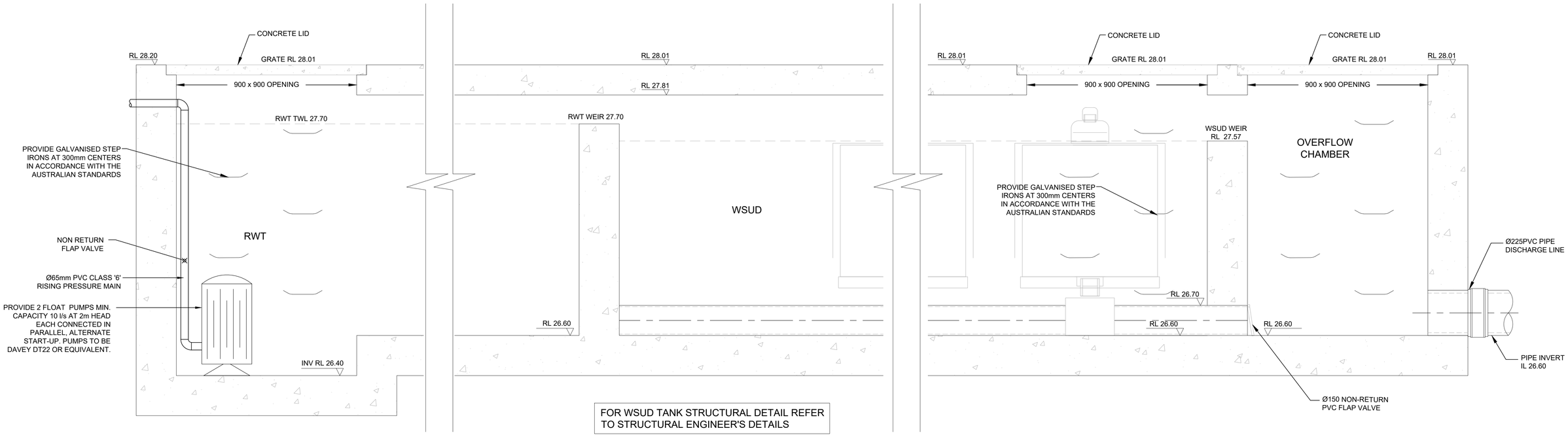
Project
118-120 STATION STREET, PENRITH
PROPOSED MIXED USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION

Drawing Title
WSUD CATCHMENT PLAN, MUSIC MODEL, RESULTS & NODE WATER BALANCE

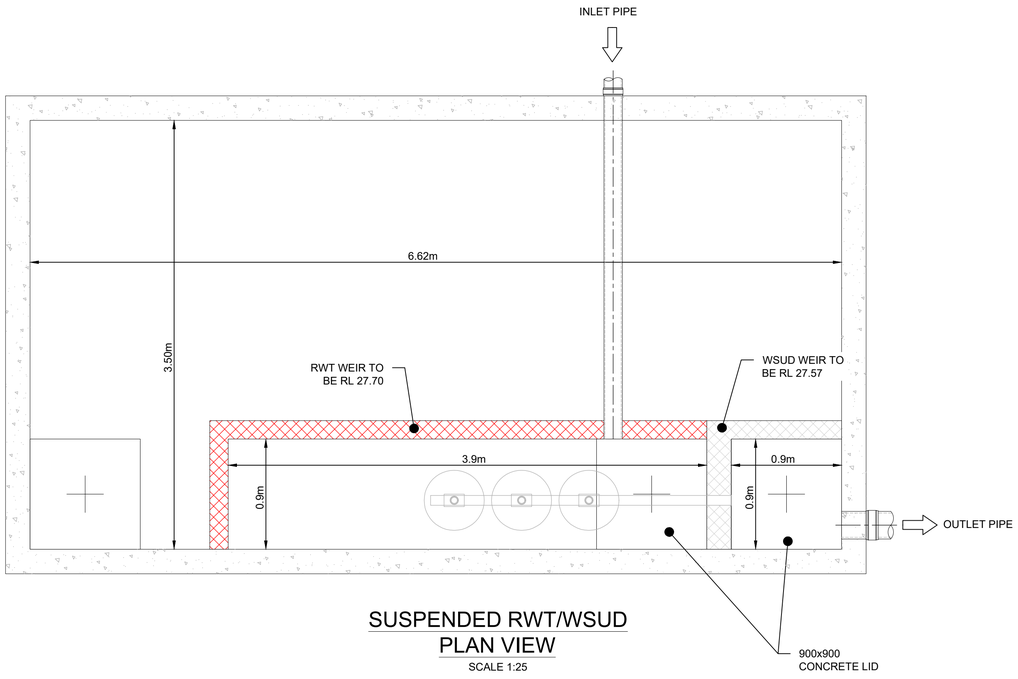
| Scale | A1 | Project No. | Dwg. No. | Issue |
|---|---|---|---|---|
| 1:100 | | 200763 | 104 | D |




FOR WSUD TANK STRUCTURAL DETAIL REFER TO STRUCTURAL ENGINEER'S DETAILS

## SUSPENDED RWT/WSUD DETAIL

N.T.S.



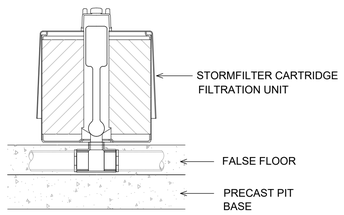

## SUSPENDED RWT/WSUD PLAN VIEW

SCALE 1:25

## GENERAL NOTES

1. INLET AND OUTLET PIPING SHALL BE SPECIFIED BY SITE CIVIL ENGINEER (SEE PLANS) AND PROVIDED BY CONTRACTOR. STORMFILTER IS PROVIDED WITH OPENINGS AT INLET AND OUTLET LOCATIONS.
2. IF THE PEAK FLOW RATE, AS DETERMINED BY THE SITE CIVIL ENGINEER, EXCEEDS THE PEAK HYDRAULIC CAPACITY OF THE PRODUCT, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED. PLEASE CONTACT STORMWATER360 FOR OPTIONS.
3. THE FILTER CARTRIDGE(S) ARE SIPHON-ACTUATED AND SELF-CLEANING. THE STANDARD DETAIL DRAWING SHOWS THE MAXIMUM NUMBER OF CARTRIDGES. THE ACTUAL NUMBER SHALL BE SPECIFIED BY THE SITE CIVIL ENGINEER ON SITE PLANS OR IN DATA TABLE BELOW. PRECAST STRUCTURE TO BE CONSTRUCTED IN ACCORDANCE WITH AS3600.
4. FOR SHALLOW, LOW DROP OR SPECIAL DESIGN CONSTRAINTS, CONTACT STORMWATER360 FOR DESIGN OPTIONS.
5. ALL WATER QUALITY PRODUCTS REQUIRE PERIODIC MAINTENANCE AS OUTLINED IN THE O&M GUIDELINES. PROVIDE MINIMUM CLEARANCE FOR MAINTENANCE ACCESS.
6. STRUCTURE AND ACCESS COVERS DESIGNED TO MEET AUSTROADS T44 LOAD RATING WITH 0-2m FILL MAXIMUM.
7. THE STRUCTURE THICKNESSES SHOWN ARE FOR REPRESENTATIONAL PURPOSES AND VARY REGIONALLY.
8. ANY BACKFILL DEPTH, SUB-BASE, AND OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY SITE CIVIL ENGINEER.
9. STORMFILTER BY STORMWATER360:
   SYDNEY (AU) PHONE: (02) 9525 5833,
   BRISBANE (AU) PHONE: (07) 3272 1872.

SYSTEM HYDRAULIC DROP
CARTRIDGE FLOW RATE




## STORMFILTER DESIGN TABLE

- STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED AND BY REGION SPECIFIC INTERNAL FLOW CONTROLS. CONVEYANCE CAPACITY IS RATED AT 80L/S.
- ALL PARTS PROVIDED AND INTERNAL ASSEMBLY BY STORMWATER360 AUSTRALIA UNLESS OTHERWISE NOTED.

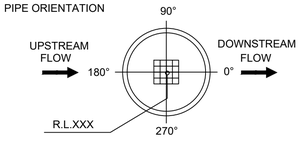
| CARTRIDGE HEIGHT | 690 | | 460 | | 310 | |
|---|---|---|---|---|---|---|
| SYSTEM HYDRAULIC DROP (H - REQ'D. MIN.) | 930 | | 700 | | 550 | |
| TREATMENT BY MEDIA SURFACE AREA L/S/m2 | 1.4 | 0.7 | 1.4 | 0.7 | 1.4 | 0.7 |
| CARTRIDGE FLOW RATE (L/s) | 1.42 | 0.71 | 0.95 | 0.47 | 0.63 | 0.32 |

## SITE SPECIFIC DATA REQUIREMENTS

| | |
|---|---|
| STRUCTURE ID | 1 |
| WATER QUALITY FLOW RATE (L/S) | - |
| PEAK FLOW RATE (L/S) | - |
| RETURN PERIOD OF PEAK FLOW (yrs) | XXX |
| # OF CARTRIDGES REQUIRED (8-22) | 4 |
| CARTRIDGE HEIGHT (310, 460 or 690mm) | 690 |
| MEDIA TYPE (PERLITE, PERLITE/ZEOLITE OR ZPG) | ZPG |
| | |
| PRECAST VAULT WEIGHT | - kg |
| PRECAST LID WEIGHT | - kg |

| PIPE DATA: | I.L. | MATERIAL | DIAMETER |
|---|---|---|---|
| INLET PIPE #1 | | PVC | |
| INLET PIPE #2 | | N/A | |
| OUTLET PIPE | | PVC | |

PIPE ORIENTATION




| | | |
|---|---|---|
| LADDER | | YES/NO |
| ANTI-FLOTATION BALLAST | N/A | N/A |
| | N/A | N/A |

## STORMFILTER TABLE

N.T.S.

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Council
Penrith Council

Scale
0 0.2 0.4 0.6 0.8 1.0 1.2m
SCALE 1:25 @ A1

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Project
118-120 STATION STREET, PENRITH
PROPOSED MIXED USE DEVELOPMENT
STORMWATER CONCEPT PLANS
DEVELOPMENT APPLICATION

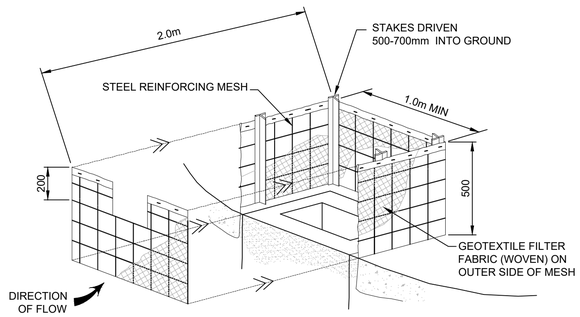
Drawing Title
RWT & WSUD DETAILS

| Scale | Project No. | Dwg. No. | Issue |
|---|---|---|---|
| As Shown A1 | 200763 | 106 | C |

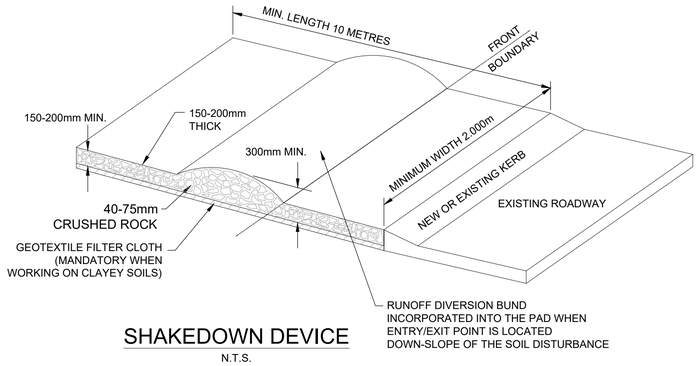

Document Set ID: 9751597
Version: 1, Version Date: 29/09/2021

# SEDIMENT & EROSION NOTES

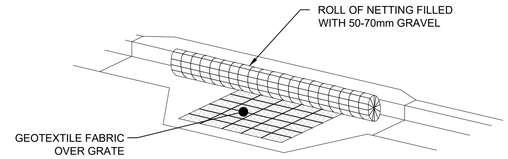
1. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO NOMINATE THE LOCATIONS AND TYPES OF SEDIMENT AND EROSION CONTROL MEASURES TO BE ADOPTED. THESE MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CLEARING OR EARTHWORKS AND MAINTAINED UNTIL THE WORKS ARE COMPLETED AND NO LONGER POSE AN EROSION HAZARD, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
2. IMMEDIATELY FOLLOWING SETTING OUT OF THE WORKS, BUT PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORKS, THE CONTRACTOR AND SUPERINTENDENT SHALL WALK THE SITE TO IDENTIFY AND MARK TREES WHICH ARE TO BE PRESERVED. NOTWITHSTANDING THE ABOVE,THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO MINIMISE DISTURBANCE TO EXISTING VEGETATION AND GROUND COVER OUTSIDE THE MINIMUM AREAS REQUIRED TO COMPLETE THE WORKS AND SHALL BE RESPONSIBLE FOR RECTIFICATION, AT ITS OWN COST, OF ANY DISTURBANCE BEYOND THOSE AREAS.
3. PROVIDE GULLY GRATE INLET SEDIMENT TRAPS AT ALL GULLY PITS.
4. PROVIDE SILT FENCING ALONG PROPERTY LINE AS DIRECTED BY SUPERINTENDENT.
5. ADDITIONAL CONTROL DEVICES TO BE PLACED WHERE DIRECTED BY THE PRINCIPLE.
6. ALTERNATIVE DESIGNS TO BE APPROVED BY SUPERINTENDENT PRIOR TO CONSTRUCTION.
7. WASH DOWN/RUMBLE AREA TO BE CONSTRUCTED WITH PROVISIONS RESTRICTING ALL SILT AND TRAFFICKED DEBRIS FROM ENTERING THE STORMWATER SYSTEM.
8. NO WORK OR STOCKPILING OF MATERIALS TO BE PLACED OUTSIDE OF SITE WORK BOUNDARY.
9. APPROPRIATE EROSION AND SEDIMENT CONTROLS TO BE USED TO PROTECT STOCKPILES AND MAINTAINED THROUGH OUT CONSTRUCTION.
10. IT IS THE CONTRACTORS RESPONSIBILITY TO TAKE DUE CARE OF NATURAL VEGETATION. NO CLEARING IS TO BE UNDERTAKEN WITHOUT PRIOR APPROVAL FROM THE SUPERINTENDENT.
11. TO AVOID DISTURBANCE TO EXISTING TREES, EARTHWORKS WILL BE MODIFIED AS DIRECTED ON-SITE BY THE SUPERINTENDENT.
12. THE LOCATION OF EROSION AND SEDIMENTATION CONTROLS WILL BE DETERMINED ON SITE BY THE SUPERINTENDENT.
13. ACCESS TRACKS THROUGH THE SITE WILL BE LIMITED TO THOSE DETERMINED BY THE SUPERINTENDENT AND THE CONTRACTOR PRIOR TO ANY WORK COMMENCING.
14. ALL SETTING OUT IS THE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO WORKS COMMENCING ON SITE. THE SUPERINTENDENT'S SURVEYOR SHALL PEG ALL ALLOTMENT BOUNDARIES, PROVIDE COORDINATE INFORMATION TO THESE PEGS AND PLACE BENCH MARKS. THE CONTRACTOR SHALL SET OUT THE WORKS FROM AND MAINTAIN THESE PEGS.
15. PLANS ARE MINIMUM REQUIREMENTS AND ARE TO BE USED AS A GUIDE ONLY. EXACT MEASURES USED SHALL BE DETERMINED ON SITE IN CONJUNCTION WITH PROGRAM OF CONTRACTORS WORKS etc.



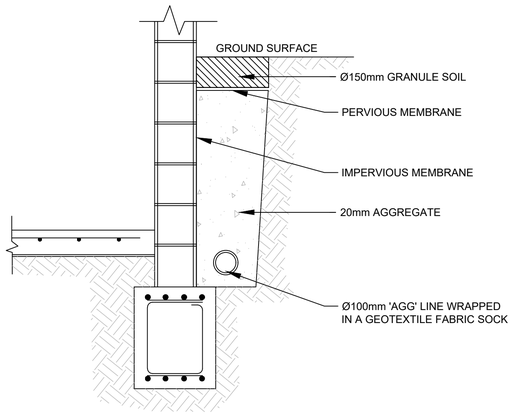

## FIELD INLET SEDIMENT TRAP
N.T.S.



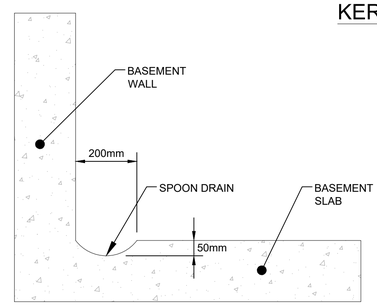

## SHAKEDOWN DEVICE
N.T.S.



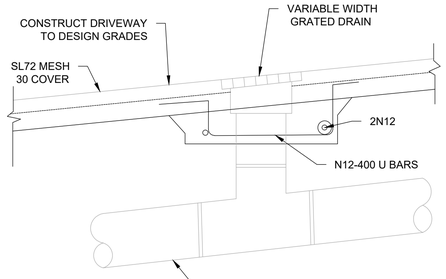

## KERB INLET PROTECTION SAG GULLIES
N.T.S.




## TYPICAL SUBSOIL DRAIN
N.T.S

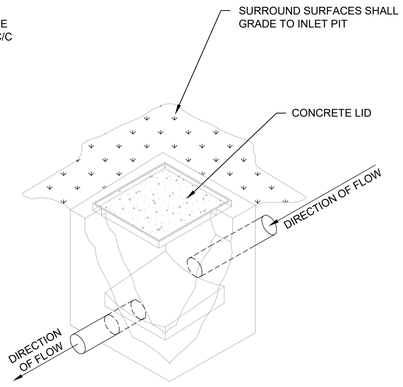



## SPOON DRAIN SECTION DETAIL
SCALE 1:10

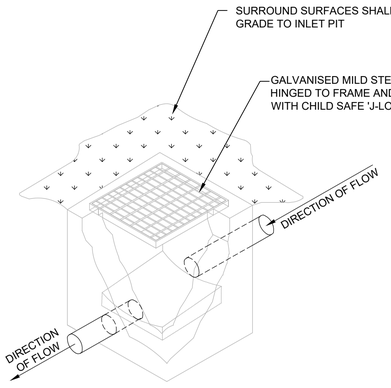



STORMWATER DRAINAGE TO BE SEWER GRADE CLASS SH STRAP TO BASEMENT WALL AT150 C/C USING GALVANISED TIES AND FIXINGS/ OR FIX TO CEILING OF UNITS AND ENCLOSURE.

## GRATED DRAIN DETAIL
N.T.S.




## TYPICAL GRATED INLET PIT DETAIL
N.T.S.

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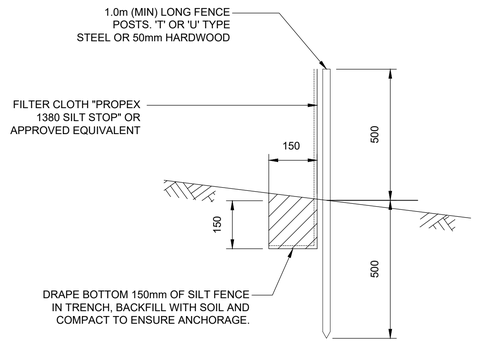


## SILT FENCE DETAIL
N.T.S

## SILT FENCE NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH GALVANISED WIRE TIES, STAPLES OR ATTACHMENT BELTS.
2. POSTS SHOULD NOT BE SPACED MORE THAN 3.0m APART.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 150mm AND FOLDED.
4. FOR EXTRA STRENGTH TO SILT FENCE, WOVEN WIRE (14mm GAUGE, 150mm MESH SPACING) TO BE FASTENED SECURELY BETWEEN FILTER CLOTH AND POSTS BY WIRE TIES OR STAPLES
5. INSPECTIONS SHALL BE PROVIDED ON A REGULAR BASIS, ESPECIALLY AFTER RAINFALL AND EXCESSIVE SILT DEPOSITS REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE
6. SEDIMENT FENCES SHALL BE CONSTRUCTED WITH SEDIMENT TRAPS AND EMERGENCY SPILLWAYS AT SPACINGS NO GREATER THAN 40m ON FLAT TERRAIN DECREASING TO 20m SPACINGS ON STEEP TERRAIN.

NOT FOR CONSTRUCTION

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from at full size 10cm 20cm


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Scale
0 200 400 600mm
SCALE 1:10 @ A1

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PROPOSED MIXED USE DEVELOPMENT
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DEVELOPMENT APPLICATION

Drawing Title
MISCELLANEOUS DETAILS SHEET

| Scale A1 | Project No. | Dwg. No. | Issue |
|---|---|---|---|
| As Shown | 200763 | 107 | C |